State of Illinois
Department Of Transportation

CONSTRUCTION INSPECTOR'S CHECKLIST FOR BITUMINOUS CONCRETE BINDER AND SURFACE COURSES, CLASS I

This checklist has been prepared to provide the field inspector a summary of easy-to-read step-by-step requirements relative to the proper construction of Bituminous Concrete Binder and Surface Courses, Class I (Section 406 of the Standard Specifications). The following questions are based on information found in the Standard Specifications, Highway Standards, Project Procedures Guide, and Construction Manual, Manual of Test Procedures for Materials, and current policy memorandums and letters.

Have you checked the contract Special Provisions, Supplemental Specifications and plans to see if any modifications have been made to the requirements listed herein? ____

1. PRELIMINARY MEASUREMENTS & STATIONING

Prior to any of the contractor's operations are you marking the pavement for beginning and ending stations? ____

Are you establishing and painting stations on the pavement and placing lath or white paint marks adjacent to the pavement wherever you will be imprinting stations in the surface course later? ____

2. TRAFFIC CONTROL

If the road is to remain open to traffic during the surfacing operations, are the protective devices as specified in Article 701.05(c) being furnished? (Art. 406.05) ____

Are you studying the plan Traffic Control Standards, Traffic Control Plan, and pre-construction conference minutes to determine the positioning of signs and flaggers and how the contractor is to be paid for this work? ____

Has the resident submitted Form OPER 725, "Traffic Control Authorization Request"? ____

When aggregate shoulders are specified to be placed adjacent to the proposed resurfacing and the road will remain open to traffic, there shall be no more than 4 lane miles of new resurfacing adjacent to the shoulder without either:

- completing the aggregate shoulders
- providing barricades or vertical panels
- erecting "LOW SHOULDERS" signs at 2 mile intervals

or

- constructing a temporary earth wedge against the edge of pavement and compacting it to the satisfaction of the Engineer. (Art. 701.05 (a)(1) ____

For edge of pavement/shoulder drop-offs exceeding 75 mm (3 inches), the contractor shall provide barricades or vertical panels according to Article 701.04(b)(1). ____

Is the contractor keeping all vehicles and/or non-operating equipment parked away from the moving traffic stream in conformance with the following?

a. During working hours, 2.5 m (8 feet) from pavement if parked for 2 hours or less. ____

b. For equipment and vehicles parked during other working hours, and for all non-working hours, 9m (30 feet), ROW permitting. When ROW doesn't permit, minimum of 15 feet. ____

Is the contractor keeping all equipment, materials and vehicles off the pavement and shoulder on the side of the pavement that is open to traffic? (Art. 701.04(b)(1)) ____

Flaggers shall be provided as follows to direct traffic and protect the workers. (Art. 701.04(c))

a. Two Lane Highways – Two flaggers shall be required for each separate operation. Work operations controlled by flaggers shall be no more than 1 mile in length. ____

b. Multilane Highways – Flaggers shall be provided when traffic is restricted to less than the normal number of lanes with a posted speed limit greater than 40 mph and workers are present. One flagger shall be required for each separate activity of an operation that requires frequent encroachment in a lane open to traffic. ____

c. Flaggers shall be certified. ____

Are you periodically driving through the contract limits to check the effectiveness of the contractor's traffic control devices? ____

3. <u>BASE PREPARATION FOR EXISTING BRICK, PCC OR BITUMINOUS BASES</u> (Art. 406.06(a) , (Art. 406.06(c)& Art. 358.05)

If the bituminous surfacing is to be placed on an existing PCC, brick or bituminous concrete, the base shall be prepared as follows:

a. Remove all excess crack filler (tar) on the pavement and all crack filler from cracks and joints more than 40 mm (1.5 inches). ____

b. Soft and unstable bituminous patches should be removed. ____

c. Areas of deep spalling and heavy disintegration shall be cleaned of all loose and unsound material with pneumatic tools or other approved equipment. ____

NOTE: The above "pavement cleaning" may be paid for at the contract unit price per square yard for PREPARATION OF BASE (Art. 358.07), but usually a pay item isn't included and the work is performed as extra work in accordance with Article 109.04. The pavement cleaning operation is a very labor-intensive process. Consult with your supervising field engineer to determine the exact scope of work to be performed as extra work.

Form BC 635, Extra Work Daily Report, must be prepared when extra work for pavement preparation is performed. Send copies to the contractor and your office. ____

Prior to placing prime and first course of bituminous concrete, are all open cracks and expansion joints having a width of 13 mm (0.5 inch) or more, and cracks and expansion joints which have been cleaned, being filled with Mixture for Cracks, Joints and Flangeways. (Art. 406.06(a)) ____

Deep spalls and heavily disintegrated areas that have been cleaned shall be filled with Leveling Binder (Hand Method). ____

4. BASE PREPARATION FOR AGGREGATE BASES

The base shall be prepared in accordance with Article 358.04. ____

5. BITUMINOUS MATERIAL SELECTION FOR PRIME COAT

Is the type of bituminous material that is used for the prime coat being selected from the table in Article 406.02 or as specified in the Special Provisions? (Art. 406.06(b)) ____

6. PRESSURE DISTRIBUTOR

Is the bituminous material being applied with a pressure distributor (Art. 1102.05) which is heated, equipped with clean spray nozzles of such design and size orifice as to ensure uniform distribution, and has been calibrated so as to apply the material at the specified rate? (Art. 403.09) ____

Is a hand spray bar being provided for applying material at intersections, shoulders and similar locations? (Art. 403.09) ____

7. DIRT ON PAVEMENT

Just before the prime is applied, is the existing base and gutter (if present) cleaned of all dust, dirt and foreign material. (Art. 406.06(b) Art. 358.05(b)) ____

Prior to all subsequent courses of construction, is the pavement being cleaned of all dirt, debris and loose material? The cost of this work is considered included in the various pay items involved. (Art. 406.04) ____

8. PLACING PRIME ON EXISTING PCC, BRICK OR BITUMINOUS BASES (Art. 406.06(b))

Two lane roadways should remain open to traffic unless otherwise provided for in the contract. ____

Traffic will not be allowed on the primed surfaces of multi-lane pavements and the traffic control shall be according to Article 701.06(f)(2). ____

Prime will be applied at a rate of 0.2 to 0.5 L/m^2 (0.05 to 0.10 gal/sy) for concrete, brick and bituminous concrete bases. (Art. 406.06(b)) ____

Pavement will be primed one traffic lane at a time. ____

The following items should be followed when placing **non-emulsion** type prime:

a. The prime coat shall be placed not less than one hour in advance of placement of bituminous concrete, and no prime coat shall be placed more than five days in advance of bituminous resurfacing. ____

b. The prime coat shall be covered immediately with fine aggregate mechanically spread at a uniform rate of 1 to 2 kg./m^2 (2 to 4 lb./sy) ____

The following items should be followed when placing **emulsion** asphalt prime:

a. The temperature in the shade should be 15°C (60°F) or higher at the time of application. ____

b. Bituminous concrete may be placed over emulsified asphalt primer when the emulsion has broken and all free moisture has evaporated or drained off the surface. ____

c. The area to be primed shall be limited to that which can be covered with bituminous concrete the same day. ____

9. PLACING PRIME ON AGGREGATE BASES (Art. 406.07(b))

Prime will be applied at the rate of 1 to 2 L/m^2 (0.25 to 0.50 gal/sq. yd.). ____

The prime coat shall be permitted to cure until the penetration has been approved by the engineer, but a minimum of 24 hours. ____

Pools of bituminous material occurring in the depressions shall be broomed or squeegeed over the surrounding surface the same day of application. ____

The base shall be primed half width at a time. ____

Immediately after application of prime coat, fine aggregate will be mechanically spread at a rate of 2 to 3 kg./m^2 (4 to 6 lb./sy). ____

10. PLANT & MATERIALS APPROVAL

Has the plant where the bituminous mixture is to be produced been approved? (Art. 1102.01) ____

Has the contractor notified you of his/her proposed sources of materials prior to delivery? (Art. 106.01) ____

Has all material been inspected, tested and approved before incorporation in the work? (Art. 106.03) ____

Are approved mix designs in the project files? (Art. 406.10 and/or QC/QA mix design verification procedure) ____

11. MINIMUM AIR TEMPERATURE

Is the base dry, and is the air temperature in the shade at least 5°C (40° F) and rising when laying leveling binder and binder courses? 10°C (45° F) and rising when placing surface course? (Art. 406.04) ____

12. LEVELING BINDER (MACHINE METHOD)

When specified as a pay item in the contract, Leveling Binder (Machine Method) will be placed prior to the bituminous concrete binder or surface course and placed in accordance with the following:

a. Placed with a finishing machine meeting the requirements of Article 1102.03. ____

b. Finishing machine shall be operated at a speed that shall ensure continuous operation (Art. 406.06(c)). ____

c. Placed and compacted in layers not exceeding a maximum depth of 50 mm (2 in.) (Art. 406.06(c)). ____

d. Total thickness placed in one day limited to 100 mm (4 in.) (Art. 406.06(c)). ____

e. Placed 24 hours prior to placing binder course or surface course (Art. 406.06(c)). ____

f. Leveling Binder (Machine Method) will be compacted to the following density requirements: (406.16(b)(1))

(1) Lift thickness less than 40 mm (1.5 in.) will be compacted to he satisfaction of the engineer. ____

(2) Lift thickness equal to or greater than 40 mm (1.5 in.) will be compacted to the density requirements of Article 406.16 (b)(1). ____

g. Refer to Article 406.16 (a), Table 1, for roller requirements. ____

13. SPREADING AND FINISHING MACHINE

The paver model shall be listed on Construction Memorandum No. 11. If not, contact your supervising field engineer.

Familiarize yourself with the mechanical features of the paver. Article 1102.03. ____

The bituminous paver shall be equipped with an automatic electronic grade control device for all courses of construction. ____

a. Capable of controlling the elevation of the screed relative to either a preset grade control stringline or a grade reference traveling on the adjacent pavement surface (Art. 1102.03). ____

b. Traveling grade reference device shall not be less than 9m (30 ft.) in length. (Art. 406.15 (a), Art. 1102.03 and Construction Memorandum No. 55.) ____

c. The grade reference device may be shortened to no less than 3 m (10 ft.) when traffic interference or sharp curves make the minimum of 9 m (30 ft.) impractical. (Art. 406.15(a) and Construction Memorandum No. 55.) ____

d. When placing bituminous mixtures within 60 m (200 ft.) of a bridge abutment, the automatic grade control shall be operated from a present grade control stringline. (Art. 406.15(a)) ____

Pavers will have a minimum 3 m (10 ft.) basic screed width for projects with greater than 6300 m^2 (7500 sy). (Art. 1102.03) ____

Basic paver screed width of 2.4 m (8 ft.) minimum will be allowed for smaller projects with less than or equal to 6300 m^2 (7500 sy). (Art. 1102.03) ____

Width extensions of the basic paver screed will have the same placement features and equipment functions as provided on the main body of the paver when placing material on the traffic lanes. (Art. 1102.03) ____

Augers shall be extended as additional sections of screed are bolted on or automatically adjustable screeds are extended. (Art. 1102.03) ____

14. PAVER OPERATING SPEED

The operating speed of the paver shall not exceed the speed which is necessary to produce a uniformly spread and struck off mat having a smooth texture without tearing or segregation. ____

Paver speed shall not exceed the average rate of delivery of bituminous material to the paver providing continuous operation. (Art. 406.15(a)) ____

Paver speed shall be mated with the required roller speed. (Art. 406.15a and Section 400 of the Construction Manual) ____

Maximum paver speed of 15 m (50 ft.) per minute. ____

15. COMPACTION

Roller equipment shall meet the requirements of Article 1101.01 and the equipment definitions in Article 406.16(a). A list of approved vibratory rollers is included in Construction Memorandum No. 10. The acceptable roller combinations for various courses of bituminous construction are shown in Article 406.16(a), Table 1. ____

MINIMUM ROLLER REQUIREMENTS FOR BITUMINOUS CONCRETE, CLASS I					
	BREAKDOWN (One of the following)	INTERMEDIATE	FINAL (One or more of the following)	MINIMUM ADDITIONAL ROLLER REQUIREMENTS	DENSITY REQUIREMENT
Level Binder <40 mm (1.5 inches)	P		T_F,V_S,3_W,P,T_B		To satisfaction of engineer
Class I, Type 1 and 2 Level Binder (other than above) Binder 1/ Surface 1/	3W,P,T_B,V_D	P	T_B,T_F,V_S	If the required density is not obtained, one of the following additional rollers 3W,P,T_B,V_D	As specified 406.16(b)
Bridge Decks 2/	T_B		T_F		As specified
Class I, Type 3 Level Binder (other than above) Binder 1/ Surface 1/	3W,P,T_S V_D	P	T_B,T_F,V_S		To satisfaction of the engineer

1/ If the average delivery at the job site is 75 metric ton/hr (85 ton/hr) or less, any roller combination may be used provided it includes a steel wheeled roller and the required density and smoothness is obtained.

2/ One T_B may be used for both Breakdown and Final rolling on bridge decks 90 m (300 ft.) or less in length, except when the air temperature is less than 15°C (60°F).

V_S - Vibratory roller, static mode, minimum 2.2 kg/mm (125 lb./in) of roller width. Max. speed = 5 km/h (3 mph) = 80 m/min (264 ft/min). Minimum drum diameter 1200 mm (48 in.), minimum drum width 1650 mm (66 in If the vibratory roller does not eliminate roller marks, its use shall be discontinued and a tandem roller adequately ballasted to remove roller marks shall be used.

V_D - Vibratory roller, dynamic mode operated at a speed to produce not less than 30 impacts/m (10 impacts/ft.) Minimum drum diameter 1200 mm (48 in.), minimum drum width 1650 mm (66 in.), minimum unit static force on vibrating drum(s) 22 N/mm (125 lb./in.), minimum total applied force 57 N/mm (325 lb./in.), and minimum of 1600 vibrations per minute (VPM). A hand type vibrating reed tachometer shall be furnished with each roller.

P - Pneumatic-tired roller, max. speed 5.5 km/h (3.5 mph) = 92 m/min (308 ft./min) Minimum tire pressure 550 kPa (80 psi). Pneumatic-tire roller shall be equipped with heat retention shields. The self-propelled pneumatic-tire roller shall develop a compression of not less than 53 N (300 lb.) nor more than 88 N/mm (500 lb./in) per mm (per inch) of width of the tire tread in contact with the bituminous surface.

T_B - Tandem roller for breakdown rolling, 7 to 11 metric tons (8 to 12 tons), 44 to 70 N/mm (250 to 400 lb./in) of roller width, max speed 5.5 km/h = 92 m/min (3.5 mph = 308 ft/min).

T_F - Tandem roller for final rolling, 35 to 70 N/mm (200 to 400 lb./in) of roller width with minimum roller width of 1.25m (50 in.). Ballast shall be increased if roller marks are not eliminated. Ballast shall be decreased if mat shoves or distorts.

3W - Three wheel roller, max. speed 5 km/h = 80 m/min (3 mph = 264 ft/min), 53 N to 70 N/mm (300 to 400 lb./in) of roller width. The three-wheel roller shall weigh 9 to 11 metric tons (10 to 12 tons).

A test strip will be constructed with a vibratory roller at the start of mix production when required by the engineer.

a. Within the first 180 metric tons (200 tons) of mixture placed per Article 406.15(b) ____

b. Within the first 275 metric tons (300 tons) of mixture produced when Special Provision for Quality Control/Quality Assurance of Bituminous Concrete Mixtures is included in the contract. The department's "Bituminous Concrete QC/QA Start-Up Procedure" will be followed and Article 406.15(b) of the Standard Specifications shall not apply. ____

A rolling pattern will be established after an acceptable test strip is done, and within the first 180 metric tons (200 tons) after production resumes. If a mixture start-up is not required, an acceptable rolling pattern shall be developed during the first 275 metric tons (300 tons) of mixture produced. ____

16. DENSITY REQUIREMENTS

The density of the bituminous concrete shall be measured by either nuclear test methods or from individual core samples. No individual test shall be below 91.0 percent of the theoretical maximum density. Leveling Binder (Machine Method) that is less than 40 mm (1.5 in) in thickness will be compacted to the satisfaction of the engineer. ____

a. Class I, Type 1 Bituminous Concrete – compacted to an average density of 92.0 to 96.0 percent of the theoretical maximum density. ____

b. Class I, Type 2 Bituminous Concrete – compacted to an average density of 93 to 97 percent of the theoretical maximum density. ____

Coring shall be conducted as follows:

a. According to Article 406.16(b)(2). ____

b. According to Check Sheet #15, Special Provision for QC/QA of Bituminous Concrete Mixture when included in the contract. ____

c. All holes caused by the removal of the cores shall be refilled immediately with bituminous concrete, and compacted and finished to the satisfaction of the engineer. ____

Nuclear methods will be performed as follows:

a. According to Article 406.16(b)(3). ____

b. According to Special Provision for QC/QA of Bituminous Concrete Mixtures when included in contract. ____

17. MIXTURE DELIVERY TEMPERATURE

Are occasional temperature checks being taken from the delivered bituminous material while in the truck and recorded? ____

Temperature must be from 120°C – 175°C (250°F – 350°F) (Art. 406.15(a)) ____

18. TRUCK REQUIREMENTS

Do the trucks hauling the mixtures meet the following requirements? (Art. 406.14)

a. Tight and clean dump bodies. ____

b. Completely insulated with at least 20 mm ($^3/_4$ inches) insulating material on all sides, end and bottom of dump body when the air temperature is below 15°C (60°F)? ____

c. Equipped with a cover of canvas or other suitable material which shall be used if any one of the following conditions are met:

1. Ambient air temperature is below 15°C (60°F). ____

2. The weather is inclement. ____

3. The mat temperature behind paver is below 120°C (250°F). ____

d. The canvas shall be rolled back before dumping the bituminous mixture into the paver. ____

19. BATCH PLANTS (without a surge bin)

When the bituminous material is coming from a batch plant (Art. 1102.01), are the following requirements being met?

a. Is a load ticket recording the net weight of the material in the truck being submitted with each delivery? (Art. 406.23) ____

b. Are all load tickets picked up and initialed by the inspector at the jobsite? (Documentation Section of the Construction Manual) ____

c. Are check weights of full truckloads being done at least once a week? (406.23) (Documentation Section of the Construction Manual and Special Provision) ____

Frequency preferably should be one per day when the plant is in continuous daily operation.

d. Are the tolerances falling within the percentages allowed? (Scale Accuracy = 0.5%; Weighman Accuracy = 0.5%) ____

e. Are all truck weight checks being reported in accordance with the Documentation Section of the Construction Manual and the Special Provisions? ____

20. WITH SURGE CONTINUOUS, DRIER DRUM & BATCH PLANT BINS

When the bituminous material is coming from a continuous plant (Art.1102.01), drier drum (Art.1102.01) or a surge bin (Art.1102.01(e)(7)), are the following requirements being met?

a. Are the contents of each truck being determined by weighing on an approved scale equipped with automatic printers to the kilograms (pound) or 0.01 metric tons (0.01 ton)? (Art.406.23) Record Department of Agriculture scale certification date and number in Quantity Book. ____

b. Is the length of the platform scale long enough to accommodate all axles of the longest truck? ____

c. Are weight checks of automatic printers being made at least once a week? (Documentation Section of the Construction Section and Special Provision) ____

d. Are all load tickets being picked up and initialed by the inspector at the jobsite? (Documentation Section of the Construction Manual) ____

21. ALIGNMENT CONTROL

Is a stringline, offset from the edge of pavement, or other approved method being used to maintain a uniform edge alignment? (Art. 406.15) ____

22. LONGITUDINAL JOINTS

Unless prohibited by stage construction, any bituminous concrete course lift shall be complete before construction of the subsequent lift. ____

Unless prohibited by stage construction, are longitudinal joints in all lifts being placed at the centerline of the pavement? (Art.406.15) ____

When stage construction prohibits the total completion of a particular lift, the longitudinal joint in one lift shall be offset at least 75 mm (3 inches) from the longitudinal joint in the preceding lift. The longitudinal joint in the surface course will be at the centerline of two lane roadways. (Art. 406.15) ____

23. ROLLING

(a) First lane:

Is the first lane of binder and surface course being rolled longitudinally by starting at the low edge and working towards the high edge, overlapping on successive trips to obtain uniform coverage? (406.16(a)) ____

(b) Adjacent lanes:

Is the first pass of the roller, when placing an adjacent mat, made along the longitudinal joint on the fresh mixture with the compression wheel not more than 150 mm (6 inches) from the joint, the second pass of the roller not more than 300 mm (12 inches) on the previously-placed lane? (Art.406.16(a)) ____

Are the following passes being made from the low edge of pavement to the high edge, overlapping on successive trips to obtain uniform coverage? (Art.406.16(a)) ____

Note: Overlapping of success trips will be minimized when using vibratory rollers in the dynamic mode. Refer to the rolling pattern established during the bituminous start-up.

24. ROLLER TECHNIQUES

Are all steel-wheeled rollers being operated with the compression wheels toward the direction of paving? (Art.406.16(a)) ____

Are the speed and the time of rolling being watched to avoid undue displacement, hair cracking, or checking in all courses of construction? (Art.406.16(a)) ____

25. YIELD TESTS

In order to ensure that the mat thickness is running uniform and to ensure that the final tonnage will not be in excess of 103% (Art.406.23) of the authorized amount, are you performing frequent yield tests? ____

26. SHORT TERM PAVEMENT MARKINGS

Is pavement marking tape or paint being placed between all lanes that are open to traffic prior to the end of the day's work? (Art.703.04) ____

a. Yellow tape or paint, 1.2 m (48 inches) at 12 m (40-foot) intervals, is to be placed along the centerline of 2-lane highways. ____

b. White tape or paint, 1.2 m (48 inches) at 12 m (40-foot) intervals, is to be placed along the lane lines separating two or more lanes of traffic moving in the same direction. ____

c. Yellow tape or paint, 1.2 m (48-inch) sections at 12 m (40-foot) intervals, is to be placed along the centerline of undivided multi-lane highways. ____

d. Edge line markings will be required on multilane divided highways and other highways with a paved shoulder greater than 1.2m (4 ft.) wide. The markings shall consist of 1.2m (48 inch) stripes on 30m (100 ft.) centers installed at a 45^{o} angle pointing in the direction of traffic. The color will match with proposed permanent striping. ____

Note: The paint option is not permitted on the final wearing surface. Also, the tape must be removed from the final wearing surface within 5 days after permanent pavement markings are placed.

27. TRANSVERSE CONSTRUCTION JOINTS

Is the transverse joint of previously-laid material cut back or formed with a header to expose a fresh vertical face that is at right angles to the centerline and of full depth of the layer? (Art.406.17) ____

28. FRAME AND GRATE ADJUSTMENT

When resurfacing existing pavement which has frames and grates of drainage and utility structures present at grade, is the adjustment of the casting to the finished elevation being performed after the binder course is placed? (Art. 603.03) ____

29. SURFACE COURSE STATIONING

Are stationing imprints being placed in the surface course at the interval specified by your Construction office? ____

30. TAPERS

When butt joints aren't specified, are all tapers at the ends of the resurfacing section and at all railroad crossings being diminished uniformly to a featheredge at a rate of 1:240 (V:H)? At paved intersections, the bituminous resurfacing shall be feathered out in a distance of 3m (10 ft.) (Art.406.19) ____

Is the last 1.5 m (5 feet) of the taper getting an additional application of prime as specified in Article 406.02? (Art.406.19) ____

31. BUTT JOINTS

For locations specified in the plans, are butt joints being constructed as follows? (Art.406.18)

a. The contractor shall not begin construction of butt joints prior to beginning general operations on the project. ____

b. Temporary bituminous ramps shall be constructed immediately at all cut faces and they shall have a minimum taper rate of 1:40 (V:H). ____

c. Temporary ramps shall be removed prior to placing the proposed surface course. ____

32. SURFACE COURSE SURFACE VARIATIONS

Each wheel lane in the completed surface course shall be tested for smoothness with a 5 m (16 ft) straightedge. The contractor shall furnish the straightedge and provide for its jobsite transportation. (Art.406.21) ____

The straightedge bolts shall be set at 5 mm ($^{3}/_{16}$ inch) for all mainline pavement and also ramps which are posted over 70 km/h (40 mph). ____

The straightedge bolts shall be set at 10mm ($^{3}/_{8}$ in.) for ramps which are posted for less than 70 km/h (40 mph), acceleration and deceleration lanes, crossovers, side street returns and other miscellaneous pavement surfaces. ____

Prepare a report for your Construction Office which includes: the location of each bump, the total design thickness of binder and surface course, and whether or not re-profiling was performed. ____

Tonnage deductions shall be assessed in accordance with the following: ____

Binder and/or Surface Course Plan Thickness, mm (inches)	Surface Course Mixture Deduction Per Variation, metric ton (ton)
(Existing Surface Not Re-profiled)	
70 (2 ¾) or more Less than 70 (2 ¾)	2 (2) 1 (1)
(Existing Surface Re-profiled)	
All	2 (2)

Removal and replacement of the bituminous concrete shall be performed when the variation in surface course equals or exceeds 20mm ($^3/_4$ in.) ____

Note: Leveling Binder (Machine Method) shall not be considered in determining the bituminous thickness for deductions.

33. SURFACE SMOOTHNESS TEST

Once the surface course is completed, are you preparing and submitting to your District Office, Form MAT 2012, "Pavement Surface Smoothness Test Request"? ____

34. SEGREGATION

The contractor and the engineer will evaluate the in place mat daily for segregation. ____

If medium or high segregation is identified, the contractor will implement corrective action. ____

35. VERTICAL CLEARANCE

Have you notified your district office of reduced vertical clearances under structures due to resurfacing? ____

36. DOCUMENTATION OF FINAL CONTRACT QUANTITIES

BITUMINOUS MATERIALS (PRIME COAT) will be documented as follows:

1. The specific gravity will be obtained from an approved Bill of Lading. Payment by volume (V) from weight tickets:

   a. $$V(L) = \frac{\text{Net Weight (kg)}}{\text{Specific Gravity}}$$ ____

   b. $$V(Gal) = \frac{\text{Net Weight (Lbs.)}}{8.328 \text{ x Specific Gravity}}$$ ____

2. Payment by volume from a meter ticket must be made using a Department of Agriculture approved meter ticket corrected for temperature. The truck distribution meter will not be accepted.

   V (Liter or Gallon) = Approved meter ticket with temperature correction ____

3. Payment by weight will be the net weight in metric tons (tons) from approved weight ticket. ____

Note: Payment will not be made for material in excess of 105% of the amount specified by the engineer. (Art.1009.03)

The following items will be paid for by the metric ton (ton) determined by weight tickets tabulated daily. Payment will not be made for bituminous mixtures in excess of 103% of the amount specified by the engineer.

AGGREGATE (PRIME COAT)
MIXTURE FOR CRACKS, JOINTS AND FLANGEWAYS
LEVELING BINDER (MACHINE METHOD)
LEVELING BINDER (HAND METHOD)
BITUMINOUS CONCRETE BINDER COURSE
BITUMINOUS CONCRETE SURFACE COURSE

Note: The BITUMINOUS CONCRETE SURFACE COURSE may be subject to an adjusted plan quantity based on the specific gravity of the mixture being used. Check the contract for the special provision titled BITUMINOUS CONCRETE SURFACE COURSE to determine if the adjustment should be made.

SHORT TERM PAVEMENT MARKING will be measured for payment as follows:

1. Placement will be paid at the contract unit price per meter (foot) for SHORT TERM PAVEMENT MARKING of the line width specified. (Art.703.04 & Art.703.07)

2. Removal of the markings will be paid for at the contract unit price per square meter (square foot) for WORK ZONE PAVEMENT MARKING REMOVAL. (Art.703.07)

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